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EXAMINER

VO, HAI

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Paper No. 33

Application Number: 08/845,897
Filing Date: April 28, 1997
Appellant(s): IMAM ET AL.

John J. Karasek
For Appellant

MAILED

SEP 10 2003

GROUP 1700

EXAMINER'S ANSWER

This is in response to the Reply Brief filed on 05/15/2001.

(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

(2) *Related Appeals and Interferences*

(3) *Status of Claims*

The statement of the status of the claims contained in the brief is correct.

(4) *Status of Amendments After Final*

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) *Summary of Invention*

The summary of invention contained in the brief is correct.

(6) *Issues*

The appellant's statement of the issues in the brief is correct.

(7) *Grouping of Claims*

The rejection of claims 1-4, 7, 11, 19 and 22 stand or fall together because appellant's brief does not include a statement that this grouping of claims does not stand or fall together and reasons in support thereof. See 37 CFR 1.192(c)(7).

(8) *Claims Appealed*

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) *Prior Art of Record*

4,605,595	TSANG et al	8-1986
4,759,000	Reitz	7-1988
3,617,364	JAREMA et al	11-1971

(10) *Grounds of Rejection*

Claims 1-4, 7, 11, 19 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Tsang et al (US 4,605,595) as set forth in section 3 of Paper no, 16. Tsang discloses an open foam structure comprised of sheets of aluminum which are vacuum impregnated with a slurry of an epoxy resin binder which contains fillers and/or friction modifiers so as to produce a filled foam structure.

Claims 1-4, 7, 19 and 22 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Reitz (US 4,759,000) as set forth in section 5 of Paper no. 16. Therein, it was set forth that Reitz discloses the claimed invention except for literally disclosing that the metal foam is an open-celled foam. However, it appears that the foam must inherently be open cell foam because the pores of the foam are filled with the impregnate (column 9, line 67 to column 10, line 11). It is further noted that Reitz discloses a hardened silicon rubber, which reads on Appellant's definition of a non-elastomeric polymeric matrix (claim 3 and page 9 of specification).

Claims 17, 18, 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Tsang (US 4,605,595) or Reitz (US 4,759,000) as set forth in section 6 of Paper no. 16. With regard to claims 17 and 18, neither Tsang nor Reitz specifically disclose pore size or the pore size relationship of the pores of the metal foam. However, it is well-known in the art that the pore size distribution directly effects the properties of the foam. It would have been within the level of ordinary skill in the art to have used a uniform pore sized foam, motivated by the desire to obtain a foam having substantially uniform properties along the entire length of the foam. Likewise, it

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would have been obvious to the skilled artisan to use a foam with gradation of pore sizes, motivated by the desire to obtain a foam with properties that vary along its length.

With regard to claim 20, a laminate containing a plurality of impregnated metal foam sheets is not literally disclosed in Tsang or Reitz. However, the skilled artisan would have found it obvious to form a laminate containing a plurality of like impregnated metal foam sheets, motivated by the desire to further enhance the properties exhibited by the use of one impregnated metal foam sheet.

With regard to claim 21, neither Tsang nor Reitz specifically discloses the thickness of the metal foam being no less than 3 times the average diameter of the cells. However, such a variable would have been recognized by one skilled in the art as to enhance the compressive, tensile properties of the metal foam. Alternatively, it would have been obvious to the skilled artisan to prepare a metal foam having a smaller average cell diameter, motivated by the desire to have optimized the compressive, flexural, shear and tensile strength of the resulting impregnated foam. As such, in the absence of unexpected results, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have optimized either the thickness of the metal foam or the average cell diameter of the metal foam motivated by the desire to enhance the tensile strength and barrier properties of the metal foam since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

(11) Response to Argument

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The examiner wishes to point out that the proposed amendment after the Appeal Brief had not been entered in accordance with the Advisory Action mailed on 03/12/01, Paper no. 27 and Decision-Denied on Applicant's petition, Paper no. 30. Therefore, the examiner has not responded to any arguments that are related to the transition language "consisting essentially of" in the Reply Brief.

Examiner's comments regarding Appellants' issue A :

The Appellants argue that the fillers and friction modifiers are not curing additives as described in Appellants' specification. The arguments are not found persuasive because the claims do not exclude an embodiment where the composite article further comprises additives such as fillers and/or friction modifiers. Further, since Appellants' polymer may include any **desired additives** (page 8 of Appellants' specification), the composition of Tsang which includes the filler and/or friction modifier reads on Appellants' claims. Appellants argue that there is no disclosure in Appellants' specification with respect to the fillers or friction modifiers or how their presence in the composite article would materially affect the basic and novel characteristics of the claimed invention. They are not found persuasive for two reasons. First, the absence of fillers or friction modifiers in Appellants' specification does not necessarily mean that their presence in the composite article would materially affect the basic and novel characteristics of the claimed invention. Second, there is no evidence in the specification to demonstrate that the presence of fillers or friction modifiers would materially affect the basic and novel characteristics of the claimed invention. The assertions that the inclusion of such components would materially alter or change the

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basic and novel characteristics of the claimed invention must be **read in light of Appellants' specification** (MPEP 2111.03). Since Appellants argue the presence of fillers or friction modifiers would materially affect the basic and novel characteristics of the claimed invention, the arguments would be found persuasive if there is a factual evidence or declaration to demonstrate the presence of fillers or friction modifiers would materially affect the basic and novel characteristics of the claimed invention even when "consisting essentially of" is not in the claims.

Examiner's comments regarding Appellants' issue B :

Appellants argue that there is no suggestion or teaching in Reitz to use a non-elastomeric polymer. The examiner disagrees because Reitz discloses the use of a hardened silicon rubber (column 9, line 67 to column 10, line 11) which reads on Appellants' definition of a non-elastomeric polymer matrix (claim 3, page 9 of specification).

Examiner's comments regarding Appellants' issue C :

With respect to claim 21, neither Tsang nor Reitz specifically discloses the thickness of the metal foam being no less than 3 times the average diameter of the cells. However, such a thickness would have been recognized by one skilled in the art as dependent upon the intended use of the product, such that the thicker the foam is, the better its tensile strength and barrier properties are. Alternatively, it would have been obvious to the skilled artisan to prepare a metal foam having a smaller average cell diameter, motivated by the desire to have optimized the compressive, flexural, shear and tensile strength of the resulting impregnated foam. As such, in the absence

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of unexpected results, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have optimized either the thickness of the metal foam or the average cell diameter of the metal foam motivated by the desire to enhance the compressive strength and barrier properties of the metal foam since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. Appellants argue that they are not sure where the examiner found the other characteristics that she enumerated. The evidence can be found in several sources in the art including Jarema (US 3,617,364) of record which teaches that the thicker metal foam shows an improved compressive strength (column 1, lines 40-42, column 7, lines 35-40). The arguments that neither Tsang nor Reitz discloses a metal foam as an acoustically absorptive material are not found persuasive. Since it appears that the composite article of Tsang or Reitz meet all the structural limitations of the claims, i.e., the metal foam completely impregnated with a polymeric matrix. It is not seen that the composite material of Tsang or Reitz would have performed differently from that of the present invention. Further, the recitation "an acoustically damping composite article" has not been given patentable weight because "an acoustically damping composite article appears to merely recite the purpose of the intended use of a structure such as acoustic absorbing material, and the body of the claim does not depend on the preamble for completeness but, instead, the structural limitations (a metal foam having an open cell structure which is impregnated with a polymeric matrix) are able to stand alone. See *In*

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re Hirao, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). In this case, Jarema (US 3,617,364) of record evidences the examiner's contention of the skill of the art by teaching that the thicker metal foam shows an improved compressive strength (column 1, lines 40-42, column 7, lines 35-40). Employing the metal foam having an increased thickness was within the level of ordinary skill at the time the claimed invention was made and such knowledge provides proper motivation for the combination set forth above. Thus nothing relied on by the examiner was gleaned solely from Appellants' disclosure.

With regard to claims 17, 18 and 20 and Appellants' reiterated positions taken with respect to the other rejections, the examiner's comments set forth above are equally pertinent in the support of these rejections as well.

For the above reasons, it is believed that the rejections should be sustained.

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Respectfully submitted,

HV

September 4, 2003



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